

WHAT IS CLAIMED IS:

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1. A method for routing packets among a plurality of nodes in a computer system, the method comprising:

5 receiving a first control packet in a first node of said plurality of nodes, said first node comprising a plurality of control packet buffers, each of said plurality of control packet buffers assigned to a different one of a plurality of virtual channels;

10 determining a first virtual channel of said plurality of virtual channels to which said first control packet belongs; and

15 storing said first control packet in a first control packet buffer of said plurality of control packet buffers, said first control packet buffer assigned to said first virtual channel.

2. The method as recited in claim 1 further comprising:

20 receiving a first data packet specified by said first control packet; and

25 storing said first data packet in a first data buffer of a plurality of data buffers within said first node, each of said plurality of data buffers assigned to a different one of said plurality of virtual channels which includes at least one control packet which specifies a corresponding data packet.

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3. The method as recited in claim 1 further comprising:

receiving a second control packet in said first node;



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7. The method as recited in claim 1 wherein said determining comprises determining that said first control packet belongs to a probe virtual channel.

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5 8. The method as recited in claim 1 wherein said determining comprises determining that said first control packet belongs to a response virtual channel.

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9. A computer system comprising:

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a first node configured to transmit a first control packet; and

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a second node coupled to receive said first control packet from said first node,  
wherein said second node comprises a plurality of control packet buffers,  
and wherein each of said plurality of control packet buffers is assigned to a  
different one of a plurality of virtual channels, and wherein said second  
node is configured to store said first control packet in a first control packet  
buffer of said plurality of control packet buffers responsive to a first  
virtual channel of said plurality of virtual channels to which said first  
control packet belongs.

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10. The computer system as recited in claim 9 wherein said second node further  
comprises a plurality of data buffers, each of said plurality of data buffers assigned to a  
different one of said plurality of virtual channels which includes at least one control  
packet which specifies a corresponding data packet.

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11. The computer system as recited in claim 10 wherein said first node is configured to  
transmit a first data packet specified by said first control packet, and wherein said second  
node is configured to store said first data packet in a first data buffer of said plurality of  
data buffers, said first data buffer assigned to said first virtual channel.

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12. The computer system as recited in claim 9 wherein said first node is configured to transmit a second control packet belonging to a second virtual channel of said plurality of virtual channels, said second virtual channel being different than said first virtual channel, and wherein said second node is configured to store said second control packet in a second control packet buffer of said plurality of control packet buffers.

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13. The computer system as recited in claim 12 wherein said further comprising a third node including a second plurality of control packet buffers, each of said second plurality of control packet buffers assigned to a different one of said plurality of virtual channels, wherein said second node is configured to transmit said first control packet to said third node responsive to a third control packet buffer of said second plurality of control packet buffers including space to store said first control packet, said third control packet buffer assigned to said first virtual channel, and wherein said second node is configured to transmit said second control packet to said third node responsive to a fourth control packet buffer of said second plurality of control packet buffers including space to store said second control packet, said fourth control packet buffer assigned to said first virtual channel.

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20 14. The computer system as recited in claim 11 wherein, if said second node is a destination of said first control packet, said second node is configured to remove said first control packet from said first control packet buffer and to respond to said first control packet.

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25 15. The computer system as recited in claim 14 wherein said second node is further configured to remove said first data packet from said first data buffer and to process said first data packet.

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16. The computer system as recited in claim 15 wherein said second node includes a

cache and a memory controller, and wherein said second node is configured to provide said first data packet to one of said cache and said memory controller responsive to said first control packet.

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17. The computer system as recited in claim 11 further comprising a third node coupled to receive packets from said second node, wherein, if said second node is not a destination of said first control packet, said second node is configured to remove said first control packet from said first control packet buffer and to forward said first control packet to said third node.

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18. The computer system as recited in claim 16 wherein said second node is further configured to remove said first data packet from said first data buffer and to forward said first data packet to said third node.

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19. The computer system as recited in claim 9 wherein said second node is configured to determine said first virtual channel to which said first control packet belongs by decoding a command field of said first control packet.

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